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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,463	07/26/2004	Burkhard Bustgens	158.002	4000

7590 12/24/2009

Jackson Patent Law Office
Suite 100
211 North Union Street
Alexandria, VA 22314

EXAMINER
LOUIE, MANDY C

ART UNIT	PAPER NUMBER
1792	

MAIL DATE	DELIVERY MODE
12/24/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/502,463	BUSTGENS, BURKHARD	
	Examiner	Art Unit	
	MANDY C. LOUIE	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-44 and 63* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-44 and 63* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/12/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/12/09 has been entered.

Status of Claims

1. Claims 1-20 and 45-62 are cancelled due to Applicant's amendments.

2. Claims 21-44, 63 are under consideration in this office action.

Claim Objections

3. Claim 26 is objected to because of the following informalities: The claim status identifier of claim 26 is indicated as "currently amended," however, it appears to be a typo since such claim recites the same limitations of claim 26 filed on 01/29/09. Appropriate correction is required.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 44 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Applicant provides support for the limitations of claim 44 from the certified translated copy of the applicant's foreign application at para 0029, which summarizes as: stationary components are positioned at defined points at the beginning of the process, and intervisibility is postulated between the stationary components and the measuring points which is not given in all cases, but a using a large number of satellies a high coverage of the object is achievable; however, it is unclear how the recited support includes “measured relative to the stationary component within only a subportion"; which upon the Applicant's original disclosure, one would have not reasonably convey that the inventor(s), at the time the application was filed, had possession of the claimed invention. "A patentee will not be deemed to have invented species sufficient to constitute the genus by virtue of having disclosed a single species when the evidence indicates ordinary artisans could not predict the operability in the invention of any species other than the one disclosed." (See MPEP 2163.II.3.a).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 34 recites the limitation "the rolling" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 21-26, 28-32, 35, 37-41, 44, 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slupe [US 6942402].

Regarding claim 21, Slupe teaches a method for forming images on surfaces of uneven objects [abstract] wherein the objects may have very large dimensions, three dimensional, comprise of wood, ceramic, metal or the like [col 1, ln 10-20] the method operating with an application device (printer) having paint application elements (print head) (wherein paint is given its broadest reasonable interpretation) and further including a first step comprising: positioning a stationary component (emitter) [col 4, ln

38-40] receiving first data corresponding to the contour of an object (geometric properties of object), generating second data based upon the estimated surface contour and the image to be printed [col 10, ln 30-35], a second step by moving the application device on the object [col 3, ln 18-20], measuring a position of a non-stationary component attached to the printer [col 4, ln 4-8; col 8, ln 15-65] relative to the stationary component [col 4, ln 35-37 or col 5, ln 3-10; col 8, ln 35-65] and applying paint on the external surface, wherein paint is not applied at positions that have already been fully painted which is determined by a processor [col 10, ln 7-15]. Alternatively, Slupe teaches determining the position of the printer relative to a reference point (which would innately be stationary) [col 3, ln 26-30], where it would have been obvious to one of ordinary skill in the art to place the emitter on the reference point since there is a finite number of places of positioning the emitter to generate positional data of the printer. Although, Slupe does not explicitly teach applying a design to a building or civil engineering work, it would have been obvious to one of ordinary skill to opt to perform a method on such surfaces by the suggested type of objects compatible with the taught method. And even though Slupe does not explicitly teach the second step being performed after completion of the first step, it would have been obvious to one of ordinary skill in the art to naturally perform in such sequence, wherein the calculated data are provided in relations to the stationary component in order to prepare to print an image in a desirable fashion. Furthermore, Slupe does not explicitly teach controlling the paint application elements by selecting a portion of the second data, the portion selected being determined by the measuring step, it would have been obvious to one of

ordinary skill in the art that the step of not printing at positions that have already been fully painted would innately select a portion of the second data based upon the measuring step in order to avoid printing over a printed area (i.e. the processor determines the position of the applicator and retrieves information from the stored image to determine if colorant has been deposited or not).

Regarding claims 22-23, the prior art teaches measuring a position using linear propagation of light or sound and or angles or wave propagation time between the non-stationary and stationary component [Slupe, col 4, ln 41-55, col 5, ln 3-11].

Regarding claim 24, the prior art teaches measuring a position includes using a camera or a light or laser source or a reflecting or absorbing landmarks or a visual feature or position sensitive device [Slupe, col 5, ln 3-11].

Regarding claim 25, the prior art teaches measuring a position by observing positional data of the surface from light or sound emitting system with a frame and receivers or frequency or polarization generating system with receivers (inside-out or outside in method) [Slupe, col 4, ln 41-55, col 5, ln 3-11].

Regarding claim 26, the prior art further teaches including a measurement of movement of the application device by measuring a linear or rotational velocity or linear or rotational acceleration [Slupe, col 9, ln 15-20] which would be obvious to one of ordinary skill in the art that by using various techniques of measuring a position of the applicator would improve accuracy of determining the position.

Regarding claim 28, although the prior art appears to be silent in teaching the providing a step of measuring a movement of the application device when intervisibility

between the non-stationary and stationary components is disturbed, it would have been obvious to one of ordinary skill in the art that since the prior art teaches while the printer moves, the process will compute the velocity [Slupe, col 10, ln 2-5; col 12, ln 30-35]; hence, it would have been obvious that even when intervisibility is disturbed, as the printer moves, the movement of the printer would continue to be measured.

Regarding claim 29, the prior art teaches when the printer is out of boundaries of the image that is to be formed on the object, the microprocessor indicates how the printer needs to be moved [Slupe, col 11, ln 55-67], wherein the teaching of measuring a movement as taught in claim 28 due to disturbed intervisability is mentioned above.

Regarding claim 30, the prior art teaches messages are generated for an operator, the message indicating a valid position or not [Slupe, col 12, ln 35-39].

Regarding claim 31, the prior art teaches the paint application is suppressed, if the position could not be evaluated sufficiently exact [Slupe, col 11, ln 15-29].

Regarding claim 32, the prior art teaches the paint application device is moved manually [Slupe, abstract].

Regarding claim 35, the paint application elements employ methods of drop on demand methods (i.e. inkjet printing) [Slupe, col 2, ln 15].

Regarding claim 37, the prior art teaches due to substantial variations in moving rates, the microprocessor will account for changes in acceleration in the print head to adjust for the firing rate of the application elements [Slupe, col 7, ln 1-15]. Although the prior art does not explicitly teach positioning offset ahead in a real time position, it would have been obvious to one of ordinary skill in the art to optimize the time at which the

printing coincides with the actual location as result effective variable in order to accurately apply paint to the actual desired location.

Regarding claim 38, the prior art teaches the first data may be generated using the stationary component (i.e. signal generated by emitter corresponding to the Z axis) [Slupe, col 4, ln 12; ln 42].

Regarding claim 39, the prior art teaches the as the number of components emitted from different locations (stationary components) increase the accuracy of determining the position increases [Slupe, col 8, ln 20-23].

Regarding claim 40, the prior art teaches generating the first data by measuring physical characteristics (i.e. contours) of the object [Slupe, col 10, ln 30].

Regarding claim 41, the prior art teaches generating the second data including compensating for features of the objects [Slupe, col 10, ln 20-35].

Regarding claim 44, the prior art teaches positioning a stationary component comprises positioning the stationary component in a way allowing the position of hte non-stationary component to be measured relative to the stationary component within only a subportion of the object [Slupe, col 3, ln 30-35; col 8, ln 20-23].

Regarding claim 63, the prior art teaches generating a message advising an operator [Slupe, col 12, ln 35-48]; responsive to the message bring the applicator device into contact with the object at a point of know position and moving the application device within the disturbance area [Slupe, col 11, ln 55-67].

3. Claims 21-27, 28-33, 35, 37-41, 44, 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slupe in view of Saund [US 6517266] and Desormeaux [US 6312124].

Alternatively, if Slupe appears to be silent in selecting a portion of the second data, the portion selected being determined by the measuring step to apply paint to the object, Saund is provided.

Regarding claim 21, Saund teaches a method of printing on a surface [abstract] which may be a wide variety of surfaces [col 3, ln 10], wherein the paint application elements is controlled by selecting a portion of the stored image for each location of the applicator (selecting a portion of the second data, the portion selected being determined by the measuring step) to print on the surface wherein paint is not applied at positions that have already been fully painted in accordance with the second data [col 6, ln 15-25; Fig. 2].

It would have been obvious to one of ordinary skill in the art at the time of the invention to control the applicator by selecting a portion of the second data by determining the measuring step. One would have been motivated to do so to uniformly apply the image and minimize influences of variations in velocity [Saund, col 6, ln 15-25].

Alternatively, Desormeaux provides obviousness for using a manual printing device to print on surfaces such as walls [abstract]. It would have been obvious to one of ordinary skill in the art to apply designs to surfaces of buildings or civil engineering works so as to provide aesthetic decorations or information.

Regarding claim 27, the prior art teaches a camera may be provided on the applicator to record an image of object to extract positional data relevant features from the recorded image to include reference patterns [Saund 0064]. It would have been obvious to one of ordinary skill in the art to provide a camera on the applicator, so as to provide additional sensing means to accurately determine the position of the applicator.

Regarding claim 33, the prior art teaches the application device may include rollers or wheels to move the application device uniformly over the object [Desormeaux, col 4, ln 31] wherein the application device is maintained in contact with the object [Desormeaux, Fig. 1]. It would have been obvious to one of ordinary skill in the art to attach rolling or sliding elements to the printer, so as to evenly space the printer to the surface and move smoothly over the surface of the object.

Regarding claim 37, the prior art teaches controlling the applicator includes taking into account that, due to the movement of the applicator, the position of the paint application element is located by amount of position offset ahead a measured real time position [Saund, col 9, ln 5-15]. It would have been obvious to one of ordinary skill in the art to adjust the application time relative to the movement of the applicator, so as to accurately deposit the image on a desired location.

Teaching of Slupe (and now in view of Saund) is further applied to the dependent claims 22-26, 28-32, 35, 38-41, 44, 63.

4. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Slupe or alternatively Slupe in view of Saund and Desormeaux; and further in view of Yamada [US 5927872].

Alternatively, Yamada is provided to teach the limitations of claim 27.

Regarding claim 27, Yamada teaches a hand held printer [abstract] which may include navigation sensors (30) attached to the printer [Fig. 3-4] wherein the sensors provide positional information due to references patterns or structural futures on the object (illumination patterns, raised surface features, references features) [col 5, ln 45-58].

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide such sensors to provide surface information. One would have been motivated to do so to further collect and determine the position of the printer on the object.

5. Claims 34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slupe or alternatively Slupe in view of Saund and Desormeaux; and further in view of Hess [US 20020158955].

The teaching of the prior art is aforementioned, but appears to be silent of the limitations of claims 34 and 36. Hess remedies this.

Regarding claim 34, Hess teaches there is a slight overlap between printheads in each print swath (areas that are printed (which would be wet at the time when overlapping) or to be printed) [0051, 3d], where a number of paint application elements laterally protrude over to the left or right of the rolling elements [Fig. 8a].

It would have been obvious to one of ordinary skills in the art to have overlapping print areas. One would have been motivated to do so in order to minimize the distinction of two printed areas [Hess, 0051].

Regarding claim 36, Hess teaches the application device may apply a top coat (fixing coat) [0034], where the application devices are in parallel [Fig. 8a].

It would have been obvious to one of ordinary skill in the art to apply a fixing coat. One would have been motivated to do so in order to protect and keep the integrity of the applied image.

6. Claims 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slupe or alternatively Slupe in view of Saund and Desormeaux; and further in view of Suenaga [US 3553371].

The teaching of the prior art is aforementioned, but appears to be silent of the limitations of claims 42-43. Suenaga remedies this.

Regarding claims 42-43, Suenaga teaches a method for enlarged multicolor printing [abstract], where a number of photoelectronic transducer elements are provided for the optical system as detecting means [col 3, ln 31-33], where the optical system is used to detect colors of the original (image), which is converted into information and used to print different colors onto a larger surface for an enlarged image [col 3, ln 10-19]. Positional data for the printing heads (second data) are determined by the optical system by detecting color [col 3, ln 10-19]. The original image data can be stored into a suitable memory means [col 7, ln 16-30] It would have been obvious to one with ordinary skill in the art to use the optical system to detect colors from a surface to generate first data (i.e. geographical information of the target surface), provided the target surface have previously printed color patterns to be used as references, to first map out the surface upon which a design is desired. One would have been motivated to

do so to further simplify the sensing system by monitoring only one surface with minimal amount of sensors and decrease any printing misalignments (since only one surface is only being scanned, rather than having one surface being model after a smaller original surface) upon the targeted surface, where resizing of the original image can be performed (calculated mathematically) more accurately by a processing unit. In light of prior art, it would have been apparent that by using this optical sensing system to determine the first data, will also be used to compensate for any color features (found from the first data) to provide color information for generating second data (i.e. pinpoint desirable location for the printing heads) to print upon a surface.

It would have been obvious to one with ordinary skill in the art at the time of the invention to use a photoelectric transducer to map the surface of the target surface (generate first data) and provide color information as a supplement to reproduce a design image on a larger surface (generating second data). One would have been motivated to do so in order to develop an easily operable and economically producible multicolor printing device [Suenaga, col 2, ln 61-63], which would minimize the number of sensing means to simplify the system and may be used upon surfaces that previously had a design that would require the system to reproduce image in the exact location in the most efficient manner by using a photoelectric sensing system that would accurately determine the correct colorant to be applied upon the surface.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 21-26, 28-32, 35, 37-41, 44, 63, are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 17, 21-22 of copending Application No. 11813009 (hereinafter '009) in view of Slupe or alternatively Slupe and Saund and Desormeaux.

Although the conflicting claims are not identical, they are not patentably distinct from each other because a method of applying paint with a paint applying tool (application device having paint application elements), where fixed references marks (stationary component) are positioned; determining the position of a point relative to the surface (receiving first data of a surface) measuring the position of the displaceable part of the paint apply tool to the reference marks (measuring a position of non-stationary component relative to stationary component, the non-stationary component attached to the application device). Since the '009 does not indicate measuring the step of

measuring a position would be invalid, the step of measuring a movement would not be necessitated. '009 fails to teach applying a design onto a surface of a building or civil engineering work with forming a second data on the geometry of the surface and controlling the paint application element by applying paint to a region which paint is not already applied. Slupe or alternatively Slupe and Saund and Desormeaux remedy this. The teaching of the prior art is as previously cited.

It would have been obvious to one of ordinary skill in the art to apply such method to a civil engineering work with complex topography. One would have been motivated to do so in order to accurately and quickly apply a desirable image to a large surface. Moreover, it would have been obvious to one of ordinary skill in the art to first gather all the relative information of the external surface and collaborate with the desired image in preparation for application of the image on a predetermined designated area external surface, wherein, subsequently after sufficient preparation, coordinate the application process with the location information in order accurately apply the image in the designated area.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

6. The references Mayfield [US 7029199] and Boleda [US 2004/0027414] are withdrawn due to applicant's submission of a certified translation (filed on 10/12/09) of the foreign priority application DE 10202553A1; wherein the applicant has indicated the

necessary support within the translation for the claimed invention (found in applicant's remarks filed on 10/12/09).

7. Applicant's arguments with respect to claim 21-44, 63 have been considered but are moot in view of the new ground(s) of rejection necessitated by applicant's submission of evidence for foreign priority.

Conclusion

1. No claim is allowed.

2. Claims 21-44, -63 are rejected for the reasons aforementioned.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MANDY C. LOUIE whose telephone number is (571)270-5353. The examiner can normally be reached on Monday to Friday, 7:30AM - 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571)272-14231423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. C. L./
Examiner, Art Unit 1792

/Timothy H Meeks/
Supervisory Patent Examiner, Art Unit 1792